# 3. LEVEL OF SERVICE RESULTS

This section of the report describes the results of the surveys of freeway, arterial and ramp-to-ramp segments. Segments that are operating at Level of Service "F" are highlighted as well as segments that have changed significantly since the 2002 survey.

The full listing of peak hour speed and Level of Service results for all CMP network segments is included in the Appendix, on pages A-1 through A-14. The data are subdivided as follows:

- P.M. Freeway Segments, Pages A-1 to A-3
- P.M. Arterial Segments, Pages A-4 to A-11
- P.M. Ramps and Special Segments, Page A-12
- A.M. Segments (Freeways only), Page A-13 & A-14

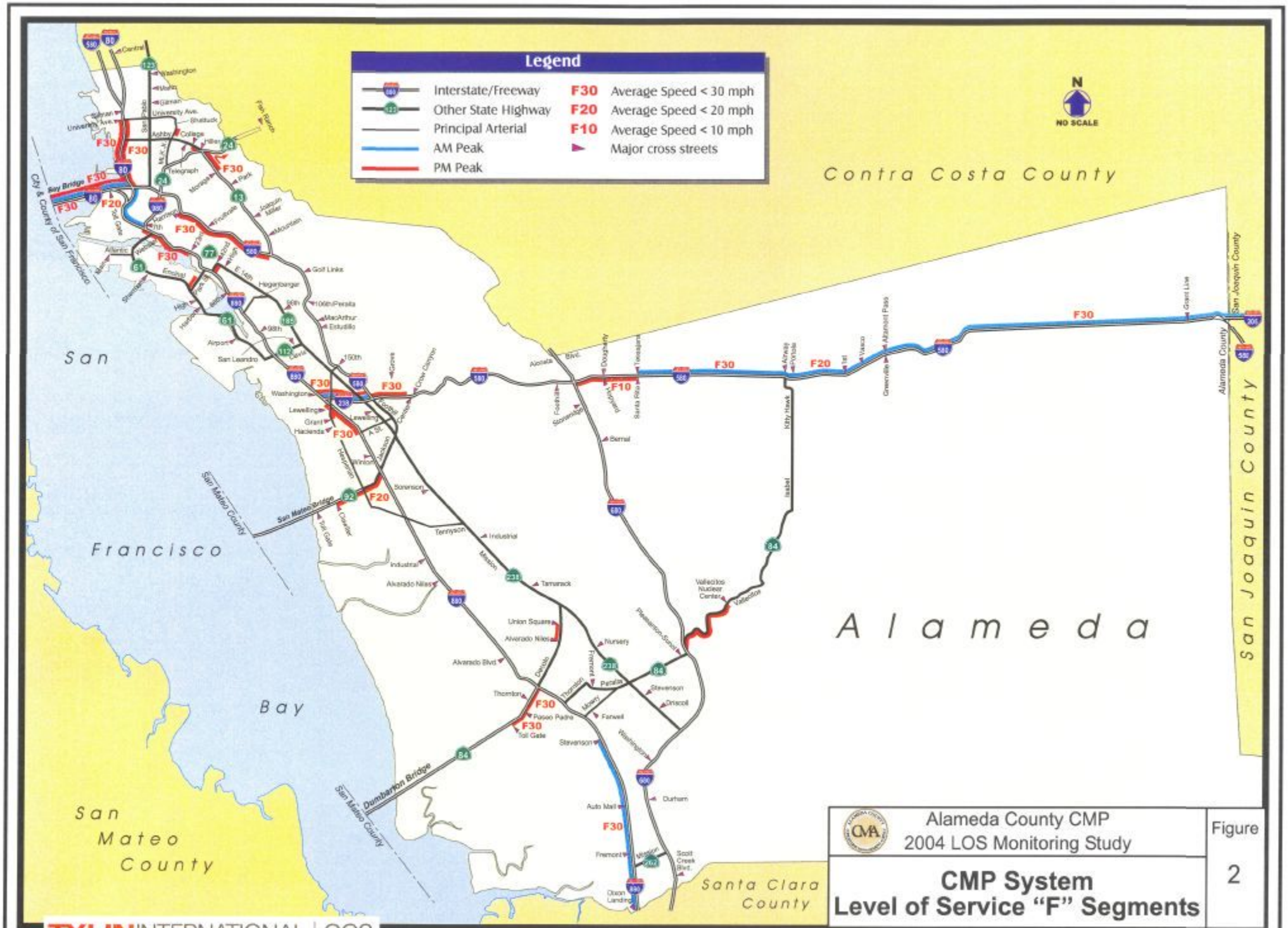
In addition to the speed and LOS results, these tables also show the number of lanes on each segment, and the estimated average daily traffic. Each entry also shows the results of the previous study (2002) to provide a comparison. The complete field data, which shows the results of each individual travel time run and other study results, is contained in the *Technical Compendium of Travel Time Studies – 2004*, which is on file at the ACCMA.

## P.M. PEAK PERIOD RESULTS

The official monitoring of the Alameda County CMP roadway system is based on the P.M. peak period level of service. Analyzing the County as a whole, the survey results show that the 2004 speeds have worsened slightly on the freeways and improved on the arterials. The overall average speeds on the freeway system during the p.m. peak period decreased by 1.3 miles per hour between 2002 and 2004, while the average arterial speeds increased by 1.1 miles per hour. There appears to be an improvement in speeds on certain freeway routes (see Table 7) such as I-880 northbound from Fremont to Oakland and I-680 southbound in the Sunol area that could be attributed to roadway improvements. Two freeway corridors are experiencing degradation in service levels (see Table 7): I-580 southbound from Oakland to Hayward and SR 13 in Oakland. Overall, arterials have remained stable or slightly improved since the 2002 surveys (see Table 8). Most notable is SR 84 in Livermore where travel times have been cut in half because of the construction of the Isabel Parkway and the realignment of SR 84. However, over this two year period, there are no overall trends that can be readily identified.

### Level of Service "F" Segments – P.M. Peak

Figure 2 shows a graphic of the County portraying the Level of Service "F" segments that were observed in the 2004 surveys. The surveys revealed that twenty-two (22) segments are operating at Level of Service "F" in 2004. These segments are listed in Table 4. Of the twenty-two (22) segments operating at Level of Service "F" during the P.M. peak period, fifteen (15) are on the freeway system, six (6) are located on arterial routes, and one (1) segment is on a freeway-to-freeway ramp. In 2002, the same number of (22) freeways segments operated at LOS F: sixteen (16) on the freeway system, four (4) on arterial routes, and two (2) segments on freeway-to-freeway ramps.

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**Segments and freeway-to-freeway ramp locations which were LOS "F" for the first time (9 locations)**

A total of nine (9), six (6) freeway segments and three (3) arterial segments, operated at LOS "F" during the P.M. peak period for the first time in 2004. They are the following:

- Oakland, I-80 westbound from the Toll Plaza to the San Francisco County Line. This segment deteriorated from LOS E in 2002 to LOS F in 2004 and could be related to construction activity on the Bay Bridge, which is currently being seismically retrofitted.
- Oakland, I-580 eastbound from Harrison to SR 13. This segment has been gradually deteriorating in LOS since 2000. It was LOS D in 2002 and LOS C in 2000.
- Oakland, I-880 southbound from I-980 to 23rd Avenue. This segment of I-880 has been LOS D or E for the past four years.
- Oakland, SR 13 northbound from Moraga to Hiller.
- Unincorporated Alameda County/Hayward, SR 84 eastbound from Toll Plaza to Thornton.
- Newark, SR 84 eastbound from Thornton to I-880.
- Berkeley, Adeline northbound from Martin Luther King, Jr. Way south (at Stanford) and Martin Luther King, Jr. Way north (at the Adeline split). This segment has deteriorated from LOS E in 2002 to LOS F in 2004.
- Alameda, Park/23rd westbound from Santa Clara to Encinal.
- Oakland, SR 77 (42nd) eastbound from I-880 to E. 14th.

This compares to five (5) new LOS F segments in 2002.

**Segments and freeway-to-freeway ramp locations which were LOS "F" in previous surveys and continue to operate at LOS "F" (12 locations).**

There were 13 segments which were previously designated at LOS "F" in one or more previous surveys and which continue at LOS "F". Of these thirteen (13) segments, eight (8) were "grandfathered", and five (5) segments were not "grandfathered" but operated at LOS "F" in one or more previous surveys. These five (5) segments are:

- Unincorporated Alameda County/San Leandro, I-238 westbound from I-580 to I-880.
- Pleasanton, I-580 eastbound from I-680 to Santa Rita Road.
- Unincorporated Alameda County/Pleasanton, I-580 westbound from Center to I-580/I-238.
- Unincorporated Alameda County, Hesperian northbound from Grant to Lewelling.
- Unincorporated Alameda County, SR84 eastbound from Pleasanton-Sunol Road to Vallecitos Nuclear Center

The remaining eight (8) segments operated at LOS "F" during the 2004 P.M. peak period and also were at LOS "F" during the 1991 CMP baseline year (and are therefore grandfathered).

- Emeryville/Berkeley, I-80 eastbound from I-580/80 merge to University Avenue.
- Berkeley/Emeryville, I-80 westbound from University Avenue to I-580 split
- Oakland, I-80 westbound from the I-580 split to the Toll Plaza.
- Unincorporated Alameda County/Hayward, I-880 southbound from I-238 to A Street.

- Hayward, SR 92 eastbound from Clawiter Road to I-880
- Berkeley, SR 13 Ashby eastbound from College to Domingo.
- Union City, Decoto Road westbound from Union Square to Alvarado-Niles Road
- Oakland, SR 13/SR 24 Interchange from SR 13 northbound to SR 24 eastbound

This compares to 17 such locations in the 2002 surveys.

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**Segments which were previously designated as LOS "F", but which have improved in the 2004 surveys (15 locations).**

- I-80 eastbound from the Toll Plaza to I-580 Merge improved from LOS "F" to "D".
- I-80 eastbound from the University to Central improved from LOS "F" to "D".
- I-238 eastbound from I-880 to I-580 improved from LOS "F" to "D"
- I-580 eastbound from Santa Rita to Portola improved from LOS "F" to "E".
- I-580 eastbound from Portola to 1st Ave. improved from LOS "F" to "E".
- I-880 northbound from Decoto to Alvarado-Niles improved from LOS "F" to "D".
- I-880 northbound from Alvarado-Niles to Tennyson improved from LOS "F" to "E".
- SR 24 eastbound from I-580 on ramp to Fish Ranch Road improved from LOS "F" to "E".
- SR 92 eastbound from San Mateo County Line to Toll Plaza improved from LOS "F" to "A".
- SR 92 eastbound from Toll Plaza to Clawiter improved from LOS "F" to "B".
- SR 84 (Fremont) westbound from Peralta Blvd. to Thornton improved from LOS "F" to "E".
- SR 123/ San Pablo northbound from 53rd to Stanford improved from LOS "F" to "E".
- I-80/I-580 interchange: I-80 southbound to I-580 eastbound improved from LOS "F" to LOS "E".
- I-580/I-680 interchange: I-680 southbound to I-580 eastbound improved from LOS "F" to LOS "B".
- I-580/I-680 interchange: I-680 southbound to I-580 westbound improved from LOS "F" to LOS "B".

In 2002 LOS Monitoring study, there were nine (9) P.M. peak hour segments that improved from LOS "F" conditions.

## Table 4
## Level of Service "F" Segments, P.M. Peak Period

| | CMP Route | From: | To: | Length (miles) | 2002 Results | 2004 Results | Prior "F" Results | Comments | Run Data (Start Time) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I-80 EB | I-580 SB Merge | University | 2.80 | F 18.9 | F30 23.5 | 91-95 97-'02 | LOS "F" from 1991 – 1995, and from 1997 - 2002 | 1. Thu 4/8 3:59 4. Tue 4/13 5:37<br>2. Tue 4/13 4:18 5. Wed 4/21 4:17<br>3. Tue 4/13 4:55 6. Wed 4/21 4:51 |
| 2 | I-80 WB | University | I-580 Split | 2.43 | F 30.6 | F30 20.9 | 91-92 94-02 | LOS "F" from 1991 – 1992, And from 1994 - 2002 | 1. Thu 4/8 4:17 4. Tue 4/13 5:11<br>2. Tue 4/13 4:04 5. Wed 4/21 4:01<br>3. Tue 4/13 4:32 6. Wed 4/21 5:33 |
| 3 | I-80 WB | I-580 Split | Toll Plaza | 1.20 | E 38.8 | F30 28.7 | 91-93, '97- '0 | LOS "F" from 1991 – 1993, 1997-2000 | 1. Thu 4/8 4:17 4. Tue 4/13 5:11<br>2. Tue 4/13 4:04 5. Wed 4/21 4:01<br>3. Tue 4/13 4:32 6. Wed 4/21 5:33 |
| **4** | **I-80 WB** | **Toll Plaza** | **SF County Line** | **2.00** | **C 50.6** | **F30 27.8** | | **First time LOS "F"** | **1. Thu 4/8 4:17 4. Tue 4/13 5:11<br>2. Tue 4/13 4:04 5. Wed 4/21 4:01<br>3. Tue 4/13 4:32 6. Wed 4/21 5:33** |
| 5 | I-238 WB | I-580 | I-880 | 1.60 | F 25.2 | F30 21.9 | '97-'02 | Has consistently been at LOS "F" since 1997. | 1. Wed 4/14 4:07 5. Wed 4/21 5:54<br>2. Wed 4/14 4:29 6. Thu 4/22 4:08<br>3. Wed 4/14 4:43 7. Thu 4/22 4:21<br>4. Wed 4/14 4:59 |
| 6 | I-580 EB | I-680 | Santa Rita | 2.72 | F 10.9 | F10 9.9 | 98-'02 | Has consistently been at LOS "F" since 1998. | 1. Wed 4/7 3:56 5. Tue 4/13 5:40<br>2. Wed 4/7 4:48 6. Wed 4/14 4:51<br>3. Thu 4/8 5:30 7. Tue 6/15 4:42<br>4. Tue 4/13 4:54 |
| 7 | I-580 WB | Center | I-580/I-238 | 1.94 | E 34.1 | F30 24.0 | '00 | LOS "F" in 2000 | 1. Tue 4/6 4:20 5. Thu 4/15 4:02<br>2. Tue 4/6 4:59 6. Thu 4/15 4:31<br>3. Tue 4/6 5:37 7. Thu 4/15 5:06<br>4. Wed 4/14 5:40 8. Thu 4/15 5:35 |

## Table 4 - Level of Service "F" Segments, P.M. Peak Period (Continued)

| | CMP Route | From: | To: | Length (miles) | 2002 Results | 2004 Results | Prior "F" Results | Comments | Run Data (Start Time) |
|---|---|---|---|---|---|---|---|---|---|
| 8 | I-580 EB | Harrison | SR 13 | 5.09 | D 48.2 | F30 29.9 | | First time LOS "F" | 1. Tue 4/6 4:02 5. Thu 4/8 4:46<br>2. Tue 4/6 4:34 6. Thu 4/8 5:26<br>3. Wed 4/7 4:30 7. Thu 6/3 5:00<br>4. Wed 4/7 5:13 |
| 9 | I-880 SB | I-980 | 23rd | 2.79 | D 42.8 | F30 20.2 | | First time LOS "F" | 1. Wed 4/14 5:27 5. Tue 4/27 4:18<br>2. Tue 4/20 3:59 6. Tue 4/27 4:53<br>3. Tue 4/20 4:33 7. Wed 6/9 5:30<br>4. Tue 4/20 5:06 |
| 10 | I-880 SB | I-238 | A St. | 2.03 | F 26.7 | F30 28.1 | 91-92, '00-02 | LOS "F" from 1991 – 1992, And 2000-2002 | 1. Tue 4/13 4:00 4. Wed 4/28 4:19<br>2. Tue 4/13 4:39 5. Wed 4/28 4:55<br>3. Tue 4/13 5:19 6. Wed 4/28 5:29 |
| 11 | SR 13 NB | Moraga | Hiller | 1.57 | D 45.3 | F20 22.1 | | First time LOS "F" | 1. Wed 4/7 4:10 5. Thu 4/8 5:20<br>2. Wed 4/7 4:45 6. Thu 4/8 5:45<br>3. Wed 4/7 5:15 7. Thu 6/3 4:11<br>4. Thu 4/8 5:00 8. Thu 6/3 4:28 |
| 12 | SR 84 EB | Toll Gate | Thornton | 0.27 | D 48.9 | F30 29.8 | | First time LOS "F" | 1. Wed 5/5 4:00 5. Thu 5/6 5:14<br>2. Wed 5/5 4:21 6 Thu 5/6 5:40<br>3. Wed 5/5 4:43 7. Tue 6/15 4:33<br>4. Wed 5/5 5:49 |
| 13 | SR 84 EB | Thornton | I-880 | 2.21 | C 50.2 | F30 29.7 | | First time LOS "F" | 1. Wed 5/5 4:00 5. Thu 5/6 5:14<br>2. Wed 5/5 4:21 6. Thu 5/6 5:40<br>3. Wed 5/5 4:43 7. Tue 6/15 4:33<br>4. Web 5/5 5:49 |
| 14 | SR 92 EB | Clawiter | I-880 | 2.10 | F 23.8 | F20 14.2 | 91-92, 94-95, 97-02 | Has consistently been at LOS "F" since 1991. | 1. Thu 4/15 4:19 5. Thu 4/22 5:25<br>2. Thu 4/15 5:00 6. Thu 4/22 6:01<br>3. Thu 4/15 5:32 7. Tue 6/8 4:27<br>4. Thu 4/22 4:51 8. Tue 6/8 4:58 |

## Table 4- Level of Service "F" Segments, P.M. Peak Period (Continued)

| | CMP Route | From: | To: | Length (miles) | 2002 Results | 2004 Results | Prior "F" Results | Comments | Run Data (Start Time) |
|---|---|---|---|---|---|---|---|---|---|
| 15 | Hesperian NB | Grant | Lewel-ling | 0.28 | E 12.2 | F 8.2 | '00 | LOS "F" in 2000 | 1. Wed 5/5 5:04 5. Wed 5/19 4:46<br>2. Tue 5/18 4:00 6. Wed 5/19 4:57<br>3. Tue 5/18 4:32 7. Wed 5/19 5:33<br>4. Tue 5/18 5:16 8. Tue 6/8 4:00 |
| **16** | **Adeline NB** | **MLK Jr, South (Stanford)** | **MLK Jr, North (Adeline Split)** | **0.30** | **E 10.1** | **F 9.4** | | **First time LOS "F"** | **1** Thu 4/1 5:47 **5** Wed 5/5 4:58<br>**2** Tue 4/27 5:07 **6** Wed 5/5 5:22<br>**3** Tue 4/27 5:33 **7** Thu 6/3 4:25<br>**4** Tue 4/27 4:16 |
| **17** | **Park/23rd WB** | **Santa Clara** | **Encinal** | **0.23** | **D 16.2** | **F 8.1** | | **First time LOS "F"** | **1. Tue 5/18 4:00 5. Wed 5/19 4:57**<br>**2. Tue 5/18 4:32 6. Wed 5/19 5:33**<br>**3. Tue 5/18 5:16 7. Tue 6/8 4:00**<br>**4. Wed 6/2 4:09** |
| 18 | SR 13 Ashby EB | College | Domingo | 0.50 | D 11.0 | F 6.3 | 91, 00 | LOS "F" in 1991 and 2000 | 1. Thu 4/8 3:55 4. Wed 4/28 4:56<br>2. Thu 4/8 4:42 5. Thu 5/6 4:20<br>3. Wed 4/28 4:29 6. Thu 5/6 5:27 |
| **19** | **SR 77 (42nd) EB** | **I-880** | **E. 14th** | **0.32** | **C 22.1** | **F 10.3** | | **First time LOS "F"** | **1. Thu 4/29 3:43 5. Thu 5/6 4:44**<br>**2. Thu 4/29 3:50 6. Thu 5/6 4:54**<br>**3. Thu 4/29 4:01 7. Wed 6/16 5:12**<br>**4. Thu 5/6 4:31 8. Wed 6/16 5:25** |
| 20 | Decoto WB | Union Square | Alv-Niles Rd. | 0.25 | F 4.2 | F 8.1 | 91-94, 96,98-02 | Has been consistently at LOS "F" in previous surveys | 1. Tue 5/4 5:28 5. Thu 5/6 5:07<br>2. Wed 5/5 4:00 6. Thu 5/6 5:34<br>3. Wed 5/5 4:23 7. Tue 6/8 5:10<br>4. Thu 5/6 4:44 |
| 21 | SR 84 EB | Pleas-Sunol Rd. | Vallecitos Ent. | 2.96 | n/a | F 17.5 | '02 | LOS "F" in 2002 | 1. Wed 5/19 5:42 4. Tue 5/25 4:06<br>2. Thu 5/20 5:03 5. Tue 5/25 4:22<br>3 Thu 5/20 5:19 6. Tue 5/25 4:37 |
| 22 | SR 13/SR 24 Interchange | SR 13 NB | SR 24 EB | 0.32 | F 6.5 | F 9.5 | '92-'02 | Has been consistently at LOS "F" in previous surveys | 1. Tue 5/4 4:02 5. Wed 5/19 5:49<br>2. Tue 5/4 4:09 6. Wed 5/19 5:59<br>3. Tue 5/4 4:16 7. Wed 6/16 5:20<br>4. Tue 5/19 5:40 8. Wed 6/16 5:26 |

## AM PEAK PERIOD RESULTS

The A.M. peak period has been surveyed since 1994. The A.M. peak data was collected only for selected segments that were considered to be the most critical freeway segments during the morning commute peak hours. The study methodology was the same as for the P.M. studies. Approximately 140 miles of the CMP network divided into 45 segments were studied in 2004 to determine the A.M. Peak Level of Service. In 2000, the number of segments were increased from 23 to 45.

The results of the A.M. peak period studies are not used to determine CMP conformity findings, but only to provide supplemental information for use by the CMA, and for use in the Countywide traffic model. The results of these surveys are shown in Figure 3 and Table 5 and are included in the Appendix on pages A-13 and A-14.

Nine (9) segments operated at LOS F in the 2004 surveys compared to fourteen (14) segments in 2002. Four (4) of these segments were previously measured at LOS "F".

- Oakland, I-80 westbound from the I-80/I-580 Split to the Toll Plaza.
- Oakland, I-80 westbound from the Toll Plaza to the San Francisco County line.
- Alameda County/San Leandro, I-238 northbound from I-580/SR 238 to I-880
- Alameda County/Livermore, I-580 westbound from I-205 to 1st Avenue (New LOS "F")
- Livermore, I-580 westbound from 1st Avenue to Portola (New LOS "F")
- Alameda County, I-580 westbound from Portola to Tassajara. (New LOS "F")
- Fremont, I-880 southbound from Stevenson to SR 262/Mission (New LOS "F")
- Fremont, I-880 southbound from SR 262/Mission to Dixon Landing.
- Oakland, I-880 northbound from I-980 to I-880/80 merge. (New LOS "F")

The freeway segments with the most congested A.M. traffic conditions are I-80 on the approaches to the Bay Bridge, I-238 in Hayward, I-580 over the Altamont Pass into Livermore, I-880 in Fremont, and I-880 in Oakland.


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## Table 5
## Level of Service "F" Segments, A.M. Peak Period

| | CMP Route | From: | To: | Length (miles) | 2002 Results | 2004 Results | Prior "F" Results | Comments | Run Data (Start Time) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I-80 WB | I-80/I-580 Split | Toll Gate | 1.20 | F 8.8 | F20 19.7 | 97-'02 | LOS "F" from 1997 - 2002 | 1. Thu 4/1 7:00 4. Wed 4/14 7:59<br>2. Thu 4/1 7:33 5. Wed 4/14 8:24<br>3. Thu 4/1 8:06 6. Wed 4/14 8:48 |
| 2. | I –80 WB | Toll Gate | County Line | 2.00 | F 13.2 | F30 20.4 | 97-'02 | LOS "F" from 1997 - 2002 | 1. Thu 4/1 7:00 4. Wed 4/14 7:59<br>2. Thu 4/1 7:33 5. Wed 4/14 8:24<br>3. Thu 4/1 8:06 6. Wed 4/14 8:48 |
| 3. | I-238 NB | I-580/SR 238 | I-880 NB/SB Split | 1.6 | F 22.5 | F30 20.2 | '96-'02 | LOS "F" from 1996 – 2002 | 1. Tue 5/4 8:24 4. Tue 5/11 7:01<br>2. Tue 5/4 8:39 5. Tue 5/11 7:13<br>3. Tue 5/4 8:51 6. Tue 5/11 7:25 |
| **4.** | I-580 WB | **I-205** | **1st Ave** | **10.04** | **B 58.6** | **F30 25.7** | | **First time LOS "F"** | **1. Wed 5/26 7:04 4. Thu 6/3 7:21<br>2. Wed 5/26 7:42 5. Thu 6/3 7:55<br>3. Wed 5/26 8:19 6. Thu 6/3 8:35** |
| **5.** | **I-580 WB** | **1st Ave** | **Portola** | **2.52** | **D 47.0** | **F20 10.4** | | **First time LOS "F"** | **1. Wed 5/26 8:37 4. Thu 6/8 7:11<br>2. Thu 5/27 7:03 5. Tue 6/8 8:08<br>3. Thu 5/27 7:43 6. Wed 6/9 7:25** |
| **6.** | **I-580 WB** | **Portola** | **Tassa-jara** | **4.70** | **E 32.4** | **F30 27.5** | | **First time LOS "F"** | **1. Wed 5/26 8:37 4. Thu 6/8 7:11<br>2. Thu 5/27 7:03 5. Tue 6/8 8:08<br>3. Thu 5/27 7:43 6. Wed 6/9 7:25** |
| **7.** | **I-880 SB** | **Stevenson** | **SR 262/ Mission** | **4.30** | **C 51.5** | **F30 26.4** | **none** | **First time LOS "F"** | **1. Tue 4/27 8:10 5. Thu 5/6 8:39<br>2. Tue 4/27 8:40 6. Tue 5/11 7:52<br>3. Wed 4/28 7:10 7. Tue 5/11 8:22<br>4. Thu 5/6 8:11** |
| 8. | I-880 SB | SR 262/ Mission | Dixon Landing | 1.27 | D 41.9 | F30 21.4 | '96-'00 | LOS "F" from 1996 - 2000 | 1. Tue 4/27 8:10 5. Thu 5/6 8:39<br>2. Tue 4/27 8:40 6. Tue 5/11 7:52<br>3. Wed 4/28 7:10 7. Tue 5/11 8:22<br>4. Thu 5/6 8:11 |
| **9.** | **I-880 NB** | **I-980** | **I-880/80 Merge** | **3.78** | **E 38.0** | **F30 24.7** | | **First time LOS "F"** | **1. Wed 4/14 7:30 5. Thu 5/20 7:31<br>2. Wed 5/5 7:00 6. Thu 5/20 8:16<br>3. Wed 5/5 7:39 7. Wed 6/23 8:39<br>4. Wed 5/5 8:28** |